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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,323

01/20/2006

Tsutomu Sawada

T-1466

2209

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EXAMINER

AHVAZI, BIJAN

ART UNIT

PAPER NUMBER

4171

MAIL DATE

DELIVERY MODE

05/14/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,323	<b>Applicant(s)</b> SAWADA ET AL.	
	<b>Examiner</b> Bijan Ahvazi	<b>Art Unit</b> 4171	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/20/2006</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

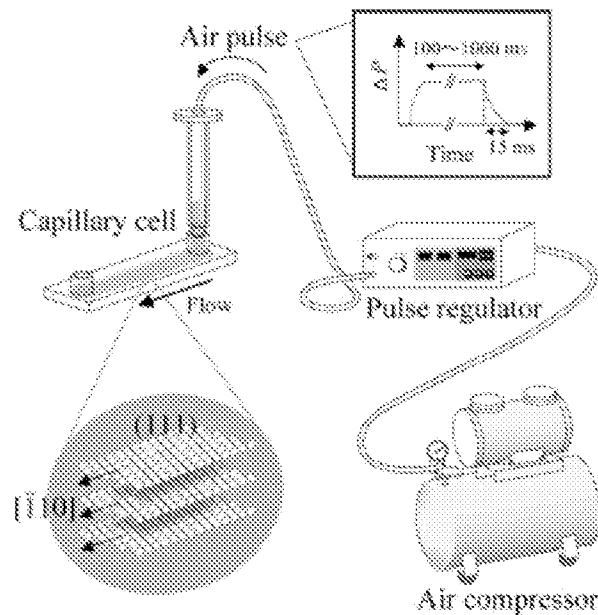
1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(b) that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Sawada (JP, 2003-212700 A).

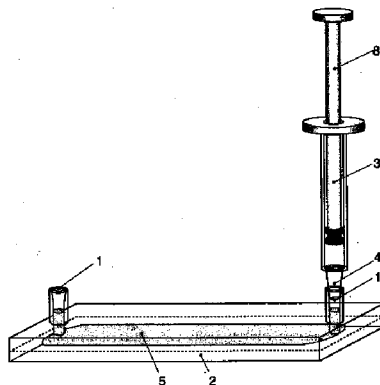
The applicants claim a colloidal crystal preparation process, wherein compressed air pulses are generated by control of a compressed gas, and then guided to a colloidal crystal preparation vessel having a flat plate type capillary portion to produce a pressure fluctuation therein, which is used as driving power, thereby giving a flow and hard- stopping motion to a colloidal solution in said flat plate type capillary for formation of colloidal crystals of good single crystallinity. The instant applicants also claim a colloidal crystal preparation system, comprising compressed gas feeder means, gas pulse formation means for producing a compressed gas as short- time gas pulses, and a colloidal crystal preparation vessel having a flat plate type capillary portion for formation of colloidal crystals. The schematic diagram of the air-puls-drive system of uniform colloidal crystals is shown below (Kanai *et al. Adv. Funct. Mater.*, 2005, 15, No 1, pp 25-29). Sawada teaches analogous colloidal crystal preparation process wherein the compressor is replaced by the syringe piston movement operation.



3. Sawada discloses (from machine translation of JP, 2003-212700) the basic constitution of the colloid single crystal production containers which has a plate shaped capillary. The container is made of a hard transparent material (§ 0038). The plate-like capillary tube is formed by having set the inside of a container as the gap of 0.5 mm or less. The pouring-in mouth is protruded and formed in the both ends of a container, and the pouring-in mouth of the one end continues from the internal plate shaped capillary to the further pouring-in mouth of the other end. Additionally, a typical syringe or a pipette can be utilized to perform the pressure operation producing a shearing flow to the colloidal solution resulting in a single crystal (§ 0018). Although the syringe piston movement operation is used (§ 0016) for dispensing fluid, after completing a series of syringe operations result in obtaining a crystal (§ 0006), without involving in air bubbles, since the pressure from syringe piston movement gives a good shearing flow to a colloidal solution, a single crystal can be formed, and the contamination of the air bubbles

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resulting from the syringe operation with the conventional needle can be prevented and this operation can also be achieved via a tube. This operation does not have any adverse effect, like the sample dispensing after single crystal formation as well as disturbing a colloid single crystal (§ 0031). It is the examiner's position that the use of syringe operations and within the interval of a series of syringe operations is considered to be a driving power in this device; in particular, the use of syringe can subsequently produce air pulses through the operation for colloidal crystal. The schematic diagram of colloidal crystals device as disclosed in JP, 2003-212700, is shown below. It is the examiner's position that syringe can be used to produce compressed air pulses result in producing a pressure fluctuation and is used as driving power. Therefore, limitation claims 1 and 3 are as being anticipated by Sawada (JP, 2003-212700 A).



### ***Claim Rejections - 35 USC § 103***

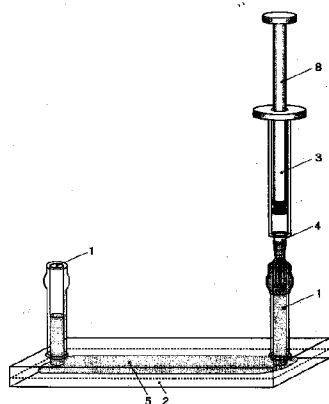
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having

ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada (JP, 2003-212700 A) in view of Coleman Powermate Pulse II generator (Model # PM0401856).

6. Sawada discloses (from machine translation of JP, 2003-212700) the basic constitution of the colloid single crystal production containers which has a plate shaped capillary. The container is made of a hard transparent material (¶ 0038). For example, plastics, such as silica glass, various optical glasses, polycarbonate, and an acrylic, are mentioned. The plate-like capillary tube is formed by having set the inside of a container as the gap of 0.5 mm or less. The pouring-in mouth is protruded and formed in the both ends of a container, and the pouring-in mouth of the one end continues from the internal plate shaped capillary to the further pouring-in mouth of the other end. Additionally, a typical syringe or a pipette can be utilized to perform the pressure operation producing a shearing flow to the colloidal solution resulting in a single crystal (¶ 0018). The schematic diagram of colloidal crystals device as disclosed in JP, 2003-212700, is shown below which is similar to the applicants' claim. However, the Sawada does not explicitly disclose a colloidal crystal gel preparation despite of using the same instrumentation in the identical fashion in the instant application.



Since the claimed compressed air pulses which are generated by control of a compressed gas are used in the instant application, it is the examiner's position any compressed generator capable of producing air pluses such as Coleman Powermate Pulse II generator (Model # PM0401856) would possess the claimed compatibility and hardness properties. It is the examiner's position that it would have been *prima facie* obvious to use the compressed generator as a driving power in the Sawada invention to give a flow and hard-stopping motion to a colloidal solution in said flat plate type capillary for formation of colloidal crystals of good single crystallinity. In re Venner, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958) (Appellant argued that claims to a permanent mold casting apparatus for molding trunk pistons were allowable over the prior art because the claimed invention combined "old permanent- mold structures together with a timer and solenoid which automatically actuates the known pressure valve system to release the inner core after a predetermined time has elapsed." The court held that broadly providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art.).

7. Claims 1, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada (JP, 2003-212700 A) in view of Sawada *et al.* (Pub. No. 2006/0144319 A1) and further in view of Coleman Powermate Pulse II generator (Model # PM0401856).

8. Sawada discloses (from machine translation of JP, 2003-212700) the basic constitution of the colloid single crystal production containers which has a plate shaped capillary. The container is made of a hard transparent material (¶ 0038). The plate-like capillary tube is formed by having set the inside of a container as the gap of 0.5 mm or less. The pouring-in mouth for

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dispensing fluid is protruded and formed in the both ends of a container, and the pouring-in mouth of the one end continues from the internal plate shaped capillary to the further pouring-in mouth of the other end. Additionally, a typical syringe or a pipette can be utilized to perform the pressure operation producing a shearing flow to the colloidal solution resulting in a single crystal (¶ 0018). The schematic diagram of colloidal crystals device as disclosed in JP, 2003-212700, is shown above which is similar to the applicants' claim. However, the Sawada does not explicitly disclose a colloidal crystal gel preparation despite of using the same instrumentation in the identical fashion in the instant application.

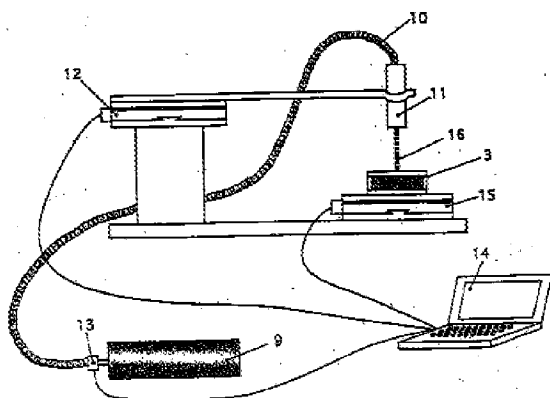
Sawada *et al.* relate to disclosure of a colloidal crystal gelled homogeneously. The colloidal solution using an aqueous liquid as a disperse medium with a monomer or macromer added thereto and camphorquinone, riboflavin or their derivative. The medium also contain a polymerization initiator which is irradiated with light having a wavelength component in the range of at least 400 nm to 500 nm for the purpose of gelation (Abstract), thereby providing a homogeneous gelation and gelled colloidal crystals obtained by use of gelation means relying upon a light source in the visible light range in place of that ultraviolet irradiation. Furthermore, the reference discloses the specific polymerization initiator capable of meeting all requirements regarding water solubility, nonionic nature and no generation of gas bubbles and visible light irradiation which are selectively used for conditions capable of obtaining gelled colloidal crystals (¶0038). However, Sawada *et al.* does not teach the same instrumentation for producing homogeneous gelation and gelled colloidal crystals. The illustrative schematic of the system used for preparing gelled colloidal crystals of given shape in the reference is shown on the left.

It would have been obvious to one having ordinary skill in the art to utilized Sawada *et al.* teaching of providing colloidal crystal gelled homogeneously medium in the Sawada



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instrument with the compressed generator as a driving power to provide a flow and hard-stopping motion to a colloidal solution in the flat plate type capillary with the motivation of formation of colloidal crystals of good single crystallinity



### ***Examiner Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bijan Ahvazi whose telephone number is (571)270-3449. The examiner can normally be reached on M-F 8:0-5:0. (Off every other Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art Unit 4171

Bijan Ahvazi, Ph.D.  
Examiner  
Art Unit 4171

/BA/